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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gilbert Wolrich et al.

Art Unit : 2177

Serial No. : 10/039,289

Examiner : Srirama Channavajjala

Filed : January 4, 2002

Title : QUEUE ARRAYS IN NETWORK DEVICES

Mail Stop Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

REPLY TO ACTION OF MAY 17, 2005

In reply to the Office Action of May 17, 2005, Applicant submits the following remarks.

The Examiner rejected claims 1-37 under 35 U.S.C. §103(a) as being unpatentable over Regache, Pascal (EP 0760501) in view of Slane (U.S. 6,438,651).

Claims 1 – 30

Claims 1-30 are distinct over Pascal in view of Slane, since the combination of Pascal and Slane neither describes nor suggests at least “a plurality of queue descriptors [each including] a head pointer ... and a tail pointer,” as recited by independent claims 1, 7, 14, and 26.

The Examiner states (on page 4 of the Office Action) that Pascal teaches a system that includes “storing in memory a plurality of queue descriptors” and cites col. 4, lines 33-39 which reads as follows:

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... on a Modulo-N basis each time a data item is written to the queue by the queue write means.

Advantageously, the status determining means is operative to determine that the circular queue is full when the producer index indicates a position in said circular continuum of N storage locations immediately preceding that indicated by the consumer index.

However this passage does not describe anything that can be interpreted as "a plurality of queue descriptors." It appears that the Examiner may have meant to cite col. 5, lines 33-39 which reads as follows:

- a paged memory having multiple memory pages.
- a circular queue made up of a plurality of segments formed in respective ones of said memory pages and each comprising a number of data-item storage locations provided in the corresponding memory page, there being a total of N such data-item storage locations in the circular queue

However, neither passage, nor any other portion of Pascal describes "a plurality of queue descriptors [each including] a head pointer ... and a tail pointer." Instead, Pascal describes a system in which a single circular queue is formed in paged memory for buffering the transfer of data items between a producer entity and a consumer entity. Pascal describes that a queue can have a plurality of queue segments, each segment corresponding to a plurality of storage locations within the same memory page. However, nowhere does Pascal, alone or in combination with Slane, teach or suggest even using a plurality of queues, much less, storing in memory "a plurality of queue descriptors [each including] a head pointer ... and a tail pointer."

The Examiner further states that "Pascal also teaches number of data items storage locations that corresponds to memory pages and data item storage locations in a circular queue that corresponds to queue descriptors; 'each including a head pointer pointing to a first element in a corresponding queue and a tail pointer pointing to a last element in the corresponding queue' [col. 7, line 14-20, fig. 2-3]" (page 4 of the office action). It is not clear from this statement what the Examiner is interpreting as the recited "queue descriptors." However, it does not matter

whether the storage locations, memory pages, or queue segments are interpreted as “queue descriptors” since none of these is described as a plurality of items each including a head pointer and a tail pointer. To the contrary, Pascal only describes a single head and tail pointer for the circular queue.

Claims 31 – 37

Claims 31-37 are distinct over Pascal in view of Slane, since the combination of Pascal and Slane neither describes nor suggests at least “a count identifying a number of elements in [the] queue,” as recited by independent claims 31, 33, 34, and 36. The Examiner has not even argued that the references teach or suggest this limitation and therefore has not established a *prima facie* case of obviousness with respect to claims 31-37 (MPEP § 2141):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Therefore, the rejection of claims 31-37 is improper since the Examiner fails to give patentable weight to all of the claim limitations.

Furthermore, one of ordinary skill in the art would not be motivated to modify and/or combine the teachings of Pascal and Slane to include a count identifying the number of elements in the queue since both Pascal and Slane teach techniques for distinguishing whether a circular queue is empty or full, and such techniques would be unnecessary if a count identified the number of elements in the queue.

In view of the above, we ask that claims 1-37 be allowed.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific issue or comment does not signify agreement with or concession of that issue or comment. In addition, because the arguments made above may not be exhaustive, there

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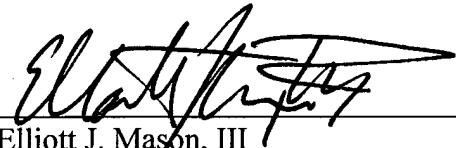
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may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

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Respectfully submitted,

Date: 7-29-05



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